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AUTHOR	Kurfman, Dana; And Others
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ABSTRACT

The methodology used in the evaluation of this unit is the same as that described in SO 000 468. Twenty-nine teachers were selected for the field trial thereby involving approximately 950 ninth through twelfth grade students. This unit has eight integral activities as well as six optional ones: 1) City Location and Growth; 2) New Orleans; 3) Models of City Form; 4) Portsville; 5) Shopping Trips and Trade Areas; 6) A Model of Settlement Systems; 7) Time Place and the Model; and, 8) Cities with Special Functions. The unit test concerning the attainment of the unit objectives indicated an 8 to 22 per cent increase in understandings and skills. The ratings on the effectiveness of the unit as a whole and the individual activities as to student and teacher interest, enjoyment, and student learning were: activities 2, 4, 8 --excellent; activities 1, 3, 5 --good; activity 7 --fair; and activity 6 --poor. A number of revisions are suggested for each activity. See SO 000 468 for a list of the related reports. (SBE)

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December 1968

HIGH SCHOOL GEOGRAPHY PROJECT

GEOGRAPHY OF CITIES

ABBREVIATED EVALUATION REPORT

Prepared by

Dana Kurfman

Robert Richburg

and

Ina Phillips

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SP 000 472

DESCRIPTION OF THE LIMITED SCHOOL TRIALS

The 1968-69 limited school trials have as their purpose the feedback of information useful in modifying the units being tried out. There have been HSGP limited school trials during the past three school years. Earlier versions of The Geography of Cities Unit were included in all three years.

The Unit Materials

As in previous years, the unit materials consist of a Teacher's Guide and Student Resources. In addition, the unit includes five Portsville boards and lego blocks, as well as a number of exercises in a Student Manual.

The unit has eight integral activities, as well as six optional ones. Four of the eight are new: Activity Five, "Shopping Trips and Trade Areas;" Activity Six, "A Model of Settlement Systems;" Activity Seven, "Time, Place and the Model" and Activity Eight, "Cities with Special Functions." Activity Two, "New Orleans" was originally included in another unit. Revised activities from last year's cities unit include: Activity One, "City Location and Growth," Activity Three, "Models of City Form," and Activity Four, "Portsville." The predicted teaching time for the integral activities is 29 to 35 days.

The Teachers

Twenty-nine teachers were selected for the 1968-69 trials. They are located in 22 different states throughout the country, 26 of them in public schools and three in parochial schools. There is reason to believe that they are considerably above average in teaching experience and in their understanding of geography. The average teaching experience of the group is about nine years, which compares to eight for the 1967-68 trials. They have had on an average 34 hours of geography in their college background. This is an average of 7 more hours than last year and twice that of two years ago. Their average teaching experience in the field of geography is about 4 and one-half years. Eighteen of them spend more than 50 per cent of their time teaching geography. Twenty of them have participated in NDEA or NSF Institutes. Ten are teachers in city schools, 15 teach in suburban schools and 4 teach in rural schools. Also, 13 of the 27 teachers taught HSGP materials in earlier trials.

The Students

Each of these teachers had one or two classes of students. Approximately 950 students participated in all. 38 per cent are in ninth grade, 26 per cent are in tenth grade, 10 per cent are in eleventh grade and 26 per cent are in twelfth grade. The proportion of tenth graders is somewhat higher than in previous years. The eleventh and twelfth graders comprise about one-third of the students as they did last year. Thus, as for last year's trials, this is probably a more mature group of students than those taking geography in American high schools as a whole.

In addition they have a higher verbal aptitude than expected for the ultimate users of the material. The mean for the whole group is the 64th percentile. This is just one percentile lower than last year. The ninth graders rank at the 75th percentile, the tenth graders at the 56th percentile, the eleventh graders at the 53rd percentile and the twelfth graders at the 60th percentile.

Also it may be of interest to note that four teachers estimated that their students are from low income families, fifteen that their students are from median income families and 10 teachers that their students are from high income families.

The Evaluation Instruments

A number of instruments were used to obtain information on which to base this evaluation report. Estimates of verbal aptitude were obtained by administering the verbal section of the Cooperative School and College Ability Test (SCAT) Form 3B. Information about the teachers was obtained by a background information questionnaire.

Teachers and students filled out evaluation forms at the conclusion of each activity and at the conclusion of the unit. Copies of these evaluation forms are included at the end of this report.

Test results for students are derived from a pool of 200 test items. These 200 items were divided into four test forms. For the first administration, a random sample of students was assigned to each test form. Through a rotation system the item pool can be administered 4 times without any one student taking the same test item twice. Thus far the test item pool has been administered twice. Once before The Geography of Cities Unit and once at the conclusion of this unit. Of the 200 items, 31 of them pertain to the cities unit. These 31 items were used for the analysis of test results for this report.

The Reference Group

A small reference group of students was obtained. These are all students of non-HSGP teachers. This group of students numbered 369 at the time the SCAT verbal was given to them. Their mean percentile rank is 64 per cent. This is exactly equal to that of the HSGP materials group. They were given the first two administrations of the four forms of the item pool. The pretest to post test changes serve as a basis for interpreting test results obtained with HSGP students.

THE UNIT AS A WHOLE

All indicators from the 1968-69 school trials suggest that this version of The Geography of Cities Unit is rated approximately the same as the version last year. In terms of student interest 81 per cent of the students express positive opinions this year, compared to 79 per cent last year. However, in previous years the unit was positively received by as many as 92 per cent of the students in the school trials. A somewhat higher percentage (84 per cent) is positive about the worthwhileness of this unit compared to what happens in their other classes. Information on this index is not available from previous years. Teacher attitude toward the unit is also virtually the same as it was toward the cities unit tried out last year. The test data further supports the view that this unit is approximately as effective as its predecessor. On the pretest the average score was 51 per cent and on the post test, 60 per cent. This 9 per cent gain compares to an 11 per cent gain in last year's trials.

School trial results point rather clearly to important differences in the effectiveness of the activities making up the unit. In rating each activity two questions asked of teachers are considered critical. They are:

1. How much do you like teaching the activity?

   A. Not at all B. Little C. Generally D. Very Much

2. Compared to what takes place in your non-HSGP classes, how effective was this activity?

   A. Much less effective B. Somewhat less effective
   C. Somewhat more effective D. Much more effective

Two questions asked of students are also considered important. They are:

1. Compared to what takes place in your other classes, how interesting was this activity?

   A. Quite a bit less interesting B. Slightly less interesting
   C. Slightly more interesting D. Quite a bit more interesting

2. Compared to what you learn in your other classes, how worthwhile was this activity?

   A. Not at all worthwhile B. Generally not worthwhile
   C. Generally worthwhile D. Very worthwhile

In order to summarize this data each teacher's and student's response is given a numerical score: A=1, B=2, C=3, D=4. When the mean rating of all teachers or all students on a given question is obtained for an activity, the activity can be placed on a scale ranging from 1 to 4.

The mean ratings derived from these four questions are graphed for each activity on the following page. Thus, it can be clearly seen how each activity is rated in relation to each other activity in terms of the four criteria used. An examination of this graph indicates that Activity 4, the "Portsville Activity," is rated considerably higher than the other activities. Likewise, at the other extreme, Activity 6 is rated lower than all other activities. In addition, Activities 1, 2 and 8 appear to be above average, while Activities 3, 5 and 7 appear to be somewhat below average.

On each of the vertical scales three points are indicated by X's. These summarize teacher and student responses to these four questions, or similar questions, last year. The middle X in each case indicates the mean of all 1967-1968 activities, the top X one standard deviation above the mean, and the bottom X one standard deviation below the mean. This is to say that approximately 15 per cent of the activities last year were rated higher than the top X and about 15 per cent were rated lower than the bottom X. Approximately one-third of the activities received ratings between the middle and the top X and one-third between the middle and the bottom X.

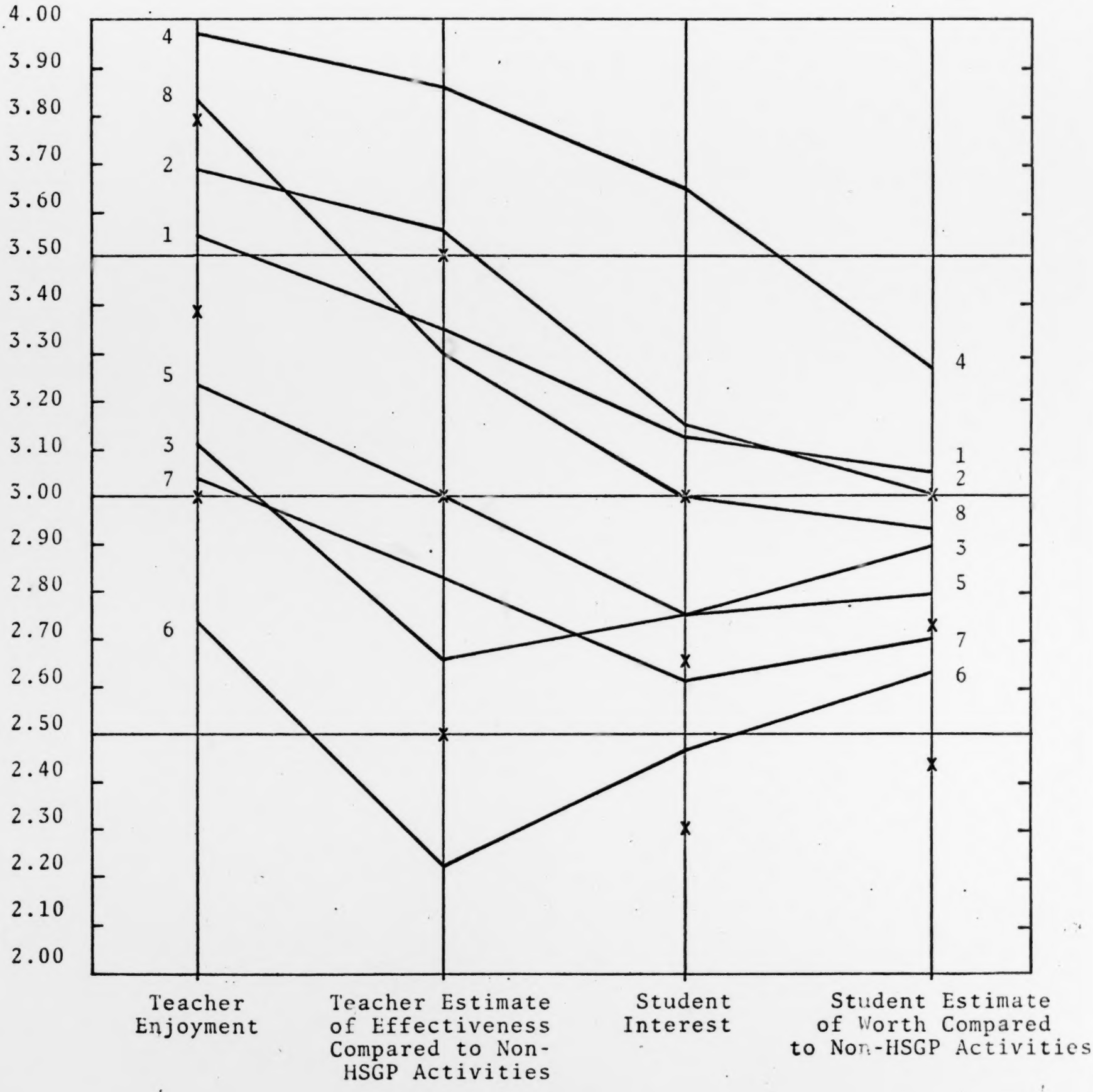
If we consider the top 15 per cent of HSGP activities as excellent, activities between the mean and one standard deviation above the mean can be considered good. Similarly, the remaining activities can be considered either fair or poor depending on where they fall on the four scales used. In the table that follows, each of this year's activities is given an excellent to poor value rating on each of the four criteria. Each activity is then given an overall rating. This reveals the same pattern as the graphs. Two activities are considered excellent, three good, two fair, and one poor. Such ratings indicate the activities that may require the most work in the process of revision.

Value Ratings of Geography of Cities Activities

Activity Number	Teacher Enjoyment	Teacher Estimate Effective	Student Interest	Student Estimate Worth	Overall Rating
1	Good	Good	Excellent	Excellent(-)	Good (+
2	Good	Excellent	Excellent	Excellent(-)	Excel.(-
3	Fair	Fair	Good	Good (Excellent)	Fair (+ Good-
4	Excellent	Excellent	Excellent	Excellent	Excel.
5	Fair	Good (-)	Good	Good(-)	Good (-
6	Poor	Poor	Fair	Fair	Poor (+
7	Fair (-)	Fair	Fair	Fair	Fair
8	Excellent (-)	Good	Excellent(-)	Good (+) (Excellent	Good (+ Excellent-

Teacher and Student Ratings of Cities Unit Activities

1968-1969



On the final questionnaire teachers are asked to rate all activities in terms of their importance to the unit and in terms of the amount of revision that each needs. As might be expected, this data supports the conclusions already reached. Those activities with at least four teachers maintaining that considerable revision is needed are Activities 3,6,7 and 8. As might be expected, Activities 1 and 4 are virtually unanimously considered to be of most importance to the unit and in need of least revision.

Test results provide information about the attainment of some but not all of the unit's conceptual objectives. Relevant questions are simply not available on all such objectives. In addition several items with pretest to post test decreases are not discussed because of the possibility that these are defective items. Three test questions relate to influences on the location and growth of urban areas (activity one). These show an average gain of 8 per cent from pretest to post test. Seven questions relate to urban land use patterns (primarily Activity 4). They show an average gain of 15 per cent. Two items relating to influences on the size and shape of trade areas show an average gain of 10 per cent (Activity 5). One item dealing with the location and spacing of different sized settlements (Activity 6) shows a gain of 22 per cent. Two items on the special functions of cities (Activity 8) show an average gain of 20 per cent. [redacted] there is no test evidence for Activity 2, 3 and 7.

At the conclusion of the unit teachers are to rate the optional activities as excellent, good, fair or poor. In virtually every instance the most common rating was good. The exception is Time-Distance. Eleven teachers considered it excellent, seven good and only one fair. It is the most highly rated of all optional activities.

On the final questionnaire teachers were asked about suggested changes in the order of activities. Five teachers suggested that Portsville be placed later in the unit because of its culminating character. Five teachers also suggested that the shopping trip activities in one way or another be condensed or combined. These are activities 5,6 and 7.

In summary, then, most revision time should be devoted to improving Activity 6, then Activities 7, 3 and 5. Fortunately, much of the improvement might take the form of combining, omitting, or rearranging parts of Activities 5,6 and 7. The only activity that would appear to warrant expansion is Activity 8. In addition, of course, a number of opportunities for clarification of activities exist. These will be specified in the form of recommendations for each activity.

RECOMMENDATIONS ON INDIVIDUAL ACTIVITIES

Activity 1--City Location and Growth

The activity was generally very well received. It was given an overall "good" rating in comparison with other HSGP materials. Part I on the Selection of Settlement Sites is the strongest part of the activity, and should need only minor revisions. Part II of the activity involving the preparation of a diagram showing the factors influencing present day site selection received little comment from the teachers. Part III dealing with predictions of urban growth is not as effective as it might be.

1. Continue to allow three days for the activity. Seven teachers indicated a sense of time pressure, but little additional time was actually requested.

2. Provide more background information for students to predict the growth of cities in the Ohio Valley. This may be both landform and historical information placed on the map and/or in the reading.

3. Provide more reading. This may be reading that provides background for either part one or part three.

4. Reword the second paragraph under Guidelines in the Teacher's Guide as to how the class should be organized for the site selection exercise. Two teachers were confused as to whether one group considers one diagram or one group considers all four diagrams.

Activity 2--New Orleans

New Orleans was more enjoyable and more effective than any activity in the unit except Portsville. It has an overall rating of "excellent" and can be considered among the strongest activities in the Geography in an Urban Age course.

1. Increase the time allocated to teaching this activity from four to five days. Twenty-two teachers indicated that four days was not sufficient time for the activity.

2. Consider the possibility of including more readings for the students. Sixty per cent of the teachers, more than for any other activity, indicated this need.

   Five teachers felt readings on the history of New Orleans would be desirable. Another three teachers would like the readings to include more information on New Orleans past and present.

   Teachers also felt that the directions for the use of the stereoviewers and stereograms should be included in the student readings as well as the Teacher's Guide. Seven teachers commented to this effect.

3. The directions given the teacher concerning the use of the stereo viewers and stereograms should be expanded. Three teachers commented on this.

Activity 3--Models of City Form

With an overall rating of "fair" Models of City Form is a below average activity by HSGP standards. The activity shows a slight improvement over last year in both teacher attitude and student interest but the improvement is not statistically significant.

In terms of the teachers' estimate of the effectiveness of this activity compared with what goes on in their non-HSGP classes, this activity received a 2.67, the second lowest rating in the unit. If this represents actual teacher attitude, a reasonably large segment of teachers is likely not to use the activity again after one experience.

1. Indicate more clearly what the teacher is supposed to do. Ten teachers made it evident that the Guide confused them. Moreover, when asked if the teaching procedures were clearly described, only 59 per cent said "yes." Only one other activity was as low as 84 per cent. All others were above 92 per cent on this point.

   Two teachers explicitly asked for help on the functions of the model.

2. Improve the clarity and quality of the questions in the Student Resources and the Guide. When asked if the quality and sequence of questions was effective for the purpose intended, e.g., class discussion, only 33 per cent said "yes." Other activities ranged from 62 per cent to 100 per cent on this point. Several teachers mentioned difficulty in provoking discussion. Two teachers said only a few of her better students were able to come up with ideas for questions on page 17. Another mentioned that students often passed over the questions in the Student Resources without being aware they were in need of an answer.

3. Make more clear what it is students are to do. Several teachers commented on the lack of student involvement, the vagueness of the Student Resources and their own uncertainty about the objectives of the activity. One teacher said that the major part of class discussion focused on "what are we doing?"

4. Give students something more active to do, if possible. Several teachers mentioned this need.

5. Make the reading more appropriate for below average readers. Only 26 per cent of the teachers felt the readings were suitable for this audience. The lowest for any other activity was 58 per cent. The difficulty may be as much with the concepts involved as anything else.

6. Re-examine the effectiveness of the maps and graphs. Although 73 per cent of the teachers were satisfied, the lowest percentage of any other activity was 92 per cent. Five teachers mentioned that the maps this year were not effective. Several mentioned that the black shading used on the transparencies is not as desirable as the colored shading of last year.

Activity 4--Portsville

Portsville continues to be an excellent activity. It is rated so in all categories by both teachers and students. It may be of interest that students rated this activity significantly higher than last year in their estimate of how interesting they thought it was. However, their estimate of how worthwhile they felt it was dropped significantly from last year's rating.

1. The 8-10 days teaching time recommended for this activity appear to be adequate and should continue to be recommended.

2. Expand Part 5 ("Portsville after 1900") to include more information about present day Seattle. Nine teachers requested more information about the Seattle of today.

3. Consider placing the Portsville activity closer to the end of the unit. Five teachers suggested this when asked on the final Teacher Questionnaire how they would reorder the activities.

4. Examine the possibility of modifying the Portsville map and lego pieces.

   Three suggestions for improving the base map were received. They were: 1) use contour lines or include a scale to indicate height of hills, 2) indicate tidelands, and 3) include a scale to indicate water depth.

   One teacher suggested improving the modulex board.

   Suggestions for improving or adding lego pieces included two requests for curved railroad pieces, one request for a lego piece to indicate major highways and a request for blocks to indicate wharves and warehouses.

Activity 5--Shopping Trips and Trade Areas

The overall rating for this activity puts it in the low range of "good." Teachers were generally less enthusiastic about it than students were. Teachers commonly commented that the materials were too elementary and intellectually unchallenging.

1. It is presently suggested in the Teacher's Guide that three to five days are needed to teach the activity. Slightly less time should be suggested in the future as most teachers were able to cover the content adequately in three to three and one-half days.

2. An effort should be made to make the activity more exciting for students. Eleven teachers indicated a lack of interest on the part of their students.

   One teacher felt that constructing the trade areas for the purchase of items more related to the students' interests would add excitement to the activity.

3. An effort should be made to make the activity more challenging for students. Four teachers said the students were not challenged by it.

   Additional readings might help to some extent. An unusual 58 per cent of the teachers indicated a need for more readings. Specifically teachers recommended readings on the construction and use of models and more readings about the Mennonites. Another suggestion in this regard is that additional exercises be included so that students can see the patterns that exist for other products and services. Two teachers felt the need for additional exercises.

4. Some way should be found to smooth the transition from cities to networks of cities. Three teachers commented on the difficulty they had in relating the content of Shopping Trips with the content of activities one through four.

Activity 6--A Model of Settlement Systems

With an overall rating of "poor" this activity must be considered unsatisfactory in its present form. Teachers were especially critical of the activity, giving it a rating that put it lower than all but two of the twenty-six activities tried in last year's school trials. Students indicated that it is the least interesting and least worthwhile activity in the unit.

1. Consider making this activity optional or dropping it from the unit. Forty per cent of the teachers favored one or the other of these possibilities. One teacher mentioned that the students with strong math backgrounds enjoyed the activity to some extent while those without such backgrounds were mystified by it. If the activity was optional teachers with such students would probably enjoy teaching it.

2. Combining activities 5, 6 and 7 should also be considered. Three teachers indicated that the time it takes to teach these three activities is not justified by the meager results.

3. Review carefully the questions in the Teacher's Guide. Four teachers indicated this need.

Two teachers felt there were too many short questions requiring only a yes or no answer and another teacher mentioned that they do not lead to fruitful discussion.

The students of one teacher had particular difficulty responding to the three questions on page 79.

4. Find ways to involve the students more actively in the materials. Seven teachers commented specifically about the lack of involvement and consequent boredom in their classes during this activity.

One teacher pointed out that outside of the compass exercise suggested in alternative one the students do virtually nothing.

Two teachers felt there should be more work for the student to do at his desk.

5. Four teachers felt their classes needed applications of the model outside of China, and preferably in their local situation to make their students believe the model works. While this need is met to some extent in Activity 7, the additional applications may come too late. This recommendation would partially answer the criticism of several other teachers who indicated that the activity was too abstract for their students.

Activity 7--Time Place and the Model

Time, Place and the Model was generally not well received by either teachers or students. It's overall rating is "fair." Only activity 6 was less interesting for both teachers and students.

It is interesting to note that if the trial teachers are divided into two groups according to how much geography and teaching experience they have had, the activity is significantly better received by those with strong backgrounds and considerable experience. The problem with this activity and the two that precede it is summed up well in a comment from one of our most experienced and best prepared trial teachers: "If an activity is to be successful, much preparation on the part of the teacher is required. I fear that unless these more difficult activities are taught in either a workshop or institute for teachers new to HSGP - a teacher may be very willing to scrap HSGP after a few frustrating days."

Of the two integral parts to the activity, Part I, Differences Between Places, is apparently more difficult to make interesting.

1. The three to four days recommended teaching time for this activity should be retained. Virtually no teacher felt the need for more time than this.

2. The nature and sequence of the questions in both the Teacher's Guide and Student Manual should be re-examined. Nine teachers indicated that the questions were not effective.

   One teacher pointed out that the Teacher's Guide makes incorrect and unrealistic assumptions about the kinds of answers students will offer. This is a particular problem in Part I of the activity.

   Another teacher indicated that the answers that the questions sought were either too obvious to be interesting or too complicated for the students to answer.

   A third teacher found the questions themselves satisfactory, but found it necessary to reorder them. For the specific procedures utilized by this teacher see the answer to question 19 on Sister Helen Schulteis' activity evaluation four.

3. Some way must be found to enable teachers lacking strong backgrounds in geography to relate the content of this activity to their students in an interesting and meaningful way. Virtually all of this year's teachers that do not have geography majors or minors have indicated they would not choose to teach this activity again.

   One-third of the teachers recommended that this activity be made optional. This would allow those feeling inadequately prepared to choose other materials to teach.

4. The possibility of incorporating more group work in the activity should be considered. Three teachers recommended this.

   One teacher felt that part of the letdown that follows the Portsville activity could be ameliorated with less individual study in activities 5, 6, and 7.

5. Attempt greater clarity in the statement about the purpose of the activity and in the educational objectives. Three teachers indicated some degree of confusion here.

   One teacher commented that the activity seemed complex and slow moving and that he was never able to make the point of the activity clear to his students.

Activity 8--Cities with Special Functions

Activity 8 receives a high "good" rating. Teachers and students both enjoyed this activity and give it excellent ratings in this category. However, when asked how worthwhile they think it is, both drop its rating to good. The feeling of teachers seems to be that with expansion this could become an excellent activity in all areas.

1. As the activity presently stands, the one class period allotted to teach the activity is sufficient. However, several teachers suggest that more time be allotted so the activity could be expanded.

2. Examine the possibility of expanding this activity to include more exercises and more depth of subject matter.

Five teachers ask for more complete development of this activity and as mentioned previously three teachers feel there should be more time allotted to this activity so the teacher may expand it himself.

Seven teachers think there is a need for more pictures of cities with special functions. The following suggestions were mentioned: Including a group of slides, warning teachers (perhaps at the beginning of the unit) so that they can bring in additional pictures, assigning students an exercise where they bring in additional pictures, adding more pictures to those already in the Student Resources and including stereo pairs and aerial photos of cities with special functions.